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Where Does the Sport Physiologist Fit In?

A recent ESPN.com article by Pat Forde entitled “Strength Coaches Doing Heavy Lifting” provides an interesting insight into Notre Dame’s American-football strength and conditioning coach Paul Longo. The article describes his significant influence on the players and how his position within the staff was on a par with the offensive and defensive coordinators, and how he subsequently benefitted from generous remuneration. Importantly, the article observes that Paul Longo had greater year-round access to the athletes, given that his coaching continued through the off-season. This last point reflects the “face time” with the athlete and, in my experience, the support staff persons (coaches, scientists, medical staff, managers, and others) with an ever-present role become regarded as key to the athlete’s performance, rightly or wrongly.

In 2002, the English Institute of Sport was officially launched in the media with a slogan of “making the best better,” and by the 2008 Olympic Games in Beijing employed over 200 service providers to support Olympic sports. The Scottish and Welsh institutes also employed a significant number of service providers. Team GB achieved 47 medals and fourth place in the 2008 Olympic Games medal table, a monumental leap forward in success that would suggest that, to some extent, performance was enhanced through improved athlete support. The home-country institutes employed sports physicians, physiotherapists, soft tissue therapists, strength and conditioning coaches, physiologists, psychologists, biomechanists, performance analysts, lifestyle advisors, and nutritionists. The largest groups were the strength and conditioning coaches and physiotherapists probably because of the perceived importance of their service and support. Interestingly, in professional sport—particularly team sports—many of the lead sport science positions are held by sports physicians or by strength and conditioning coaches because of their pivotal and daily input, yet they may not have an expert understanding of sport science.

So where does the sport physiologist fit in? Well, if the coach and sport administrator had a shopping list of service providers, it might go something like this. A sport physician and a physiotherapist would probably be at the top, as the logic is that they would be most likely to ensure that the athlete is healthy and able to compete to their full potential. Next might be the strength and conditioning coach because many coaches do not feel confident in this area, and argue that the strength and conditioning coach plays a significant role in supporting physical development, injury prevention, and rehabilitation. Athletes and sport administrators, but not necessarily coaches, might argue that the performance lifestyle advisor (or athlete career and education advisor) comes next, as they can help the athlete to achieve the work-life balance allowing them to fully commit to their sport. I know of an Olympic gold medalist who felt their advisor had a tangible impact by making sure the lift in the athlete’s building was fixed to stop a tiring walk up many stairs (with a bike!) after training. This example is not meant to poke fun or undermine the role of these advisors—quite the opposite, as this intervention positively affected the athlete’s daily training load! The performance analyst might feature next, given that video analysis software, camera, and instrumentation technologies have become

sophisticated and user friendly. Many coaches would argue that the performance analyst provides them with critical data, often in real time, identifying areas where technical and tactical (and possibly fitness) improvements can be made. Indeed, improving the ability of coaches to make objective decisions in the throes of tapering or competition affords a competitive advantage. An excellent example, albeit a motorized one, is the “performance analysis” behind the Vodafone McLaren Mercedes F1 racing team. McLaren has a team of “analysts” in a control room at the McLaren Group headquarters, in Woking, England, who receive real-time in-car telemetry transmitted from the race, thus enabling interpretations from complex data sets to be made in relative calm. The interpretations are then radioed to the team leader and chief engineers on the pit wall.

So where does that leave the sport physiologist, nutritionist, psychologist, and biomechanist? In many cases in elite sport, these roles—perhaps owing to budgetary constraints or concerns that routine testing has limitations—have become much more project focused in their approach. Many high-level sports physiology programs in various countries and sports have seemingly evolved in this way, from frequent routine testing to a targeted project focus. This can mean less “face time” compared with other support disciplines; however, once significant time has been spent with the athlete and coach identifying and defining the performance question, it is appropriate for the scientist to work remotely before coming back to further develop and refine the evidence-based intervention. Psychologists and nutritionists have been operating in consultant roles for some time; however, this is more difficult in physiology and biomechanics partly because of history, and partly because of the rapid emergence of new technology and scientific equipment. Therefore, the caveat must be that if a physiologist is deemed important to the athletes’ support, then they should be available full time so their expertise and equipment resources can be brought to bear on the training program at any time. Owing to its reliance on costly technology, biomechanical support is often perceived to be too expensive and is thus often short term and project based.

Sports physiologists are certainly not relegated to the “back benches”; however, the reality is that they remain much sought after particularly in power and team sports, where a gain in “gym” strength does not provide obvious performance enhancement, and in endurance sports, such as swimming, triathlon, middle and long distance running, rowing, and cycling. At the 2010 European Athletics Championships, when Mo Farah (Great Britain) won Gold in the 5,000 m and 10,000 m, the BBC commentator immediately recognized on air the positive influence that Dr. Barry Fudge had played in the preparation the athlete had undertaken, specifically during altitude training camps. I have also noticed that strength and conditioning coaches and physiotherapists are rightly looking to the sport physiologist to explain and enhance their practice.

Of course, the crude prioritization of medical and science support that I have outlined here is simplistic in many ways and, arguably, a multidisciplinary intervention provides the best solution, budget permitting. For example, while building up to the 2008 Beijing Games, the British Cycling team were supported by 15 English Institute of Sport and two British Cycling science and medical support staff members at the Manchester training base (of which *four* were sport physiologists). The riders won 14 medals in Beijing, 8 of which were gold, demonstrating that the sum of the science and medicine support teams is often greater than the parts!